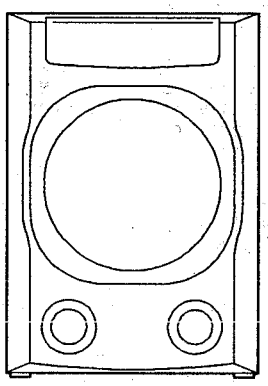
aiwa

AIWA-01923

aiwa SERVICE

TS-W9

SERVICE MANUAL



ACTIVE SPEAKER SYSTEM

• TYPE: LH,HEJ,HRJ,K,EZ,EEZ,U

SPECIFICATIONS

Input terminals
INPUT 1 jack
INPUT 2 terminals

Input sensitivity/impedance
INPUT 1: 0.8 V/50 kilo ohms
INPUT 2: 16 V/4.4 kilo ohms (L and R)

Output terminals
SPEAKERS OUT terminals

Power output
<HEJ, HRJ, LH>
100 W (4 ohms, T.H.D. 1 % at 50 Hz)
120 W (4 ohms, T.H.D. 10 % at 50 Hz)
<EEZ, EZ, K>
Rated: 100 W (4 ohms, T.H.D. 1 %, 50 Hz/DIN 45500)
Reference: 120 W (4 ohms, T.H.D. 10 %, 50 Hz/DIN 45324)
DIN MUSIC POWER: 220 W
<U>
FTC RULE
95 watts, Min. RMS at 4 ohms, from 40 Hz to 120 Hz, with no more than 1 % Total Harmonic Distortion
100 W (4 ohms, T.H.D. 1% at 50 Hz)
120 W (4 ohms, T.H.D. 10 % at 50 Hz)

Frequency response
20 Hz – 120 Hz

Speaker type Bass reflex type

Speaker unit 20 cm (7⅞ in.) (Magnetically shielded type)

Power requirement
<HEJ, HRJ, LH>
AC 120 V/220-240 V switchable, 50/60 Hz
<EEZ, EZ, K>
AC 230 V, 50 Hz
<U>
AC 120 V, 60 Hz

Power consumption
<HEJ, HRJ, LH>
95 W
<EEZ, EZ, K>
260 W
<U>
70 W

Dimensions (w/h/d)
280 × 389 × 432 mm (11⅛ × 15⅜ × 17⅛ in.)

Weight 10.5 kg (23.1 lbs.)

● Design and specifications are subject to change without notice.

S/M Code No. 09-966-138-401

ELECTRICAL MAIN PARTS LIST

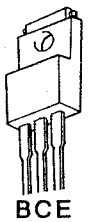
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-002-727-019		IC,NJM4558L
	S2-240-130-000		IC,MC14013BCP
	87-027-917-019		IC,TC9145P
	87-A20-062-019		IC,STK419-130
TRANSISTOR			
	89-318-155-089		TR,2SC1815GR
	89-110-155-089		TR,2SA1015GR
	89-406-555-089		TR,2SD655E
	89-322-405-089		TR,2SC2240GR
	89-420-612-019		TR,2SD2061E
DIODE			
	87-020-465-089		DIODE,1SS133-T
	87-020-123-089		DIODE,DS446-BT
	S1-58D-3SB-A20		DIODE,D3SBA20
	87-017-978-089		DIODE,1N4003
	87-070-178-099		DIODE,1N5402<U>
MAIN C.B			
C1	87-010-405-089		CAP,E 10UF-50V
C2	87-010-405-089		CAP,E 10UF-50V
C3	87-010-385-089		CAP,E 220UF-25V
C4	87-010-385-089		CAP,E 220UF-25V
C6	87-010-385-089		CAP,E 220UF-25V
C9	87-010-404-089		CAP,E 4.7UF-50V
C18	87-010-404-089		CAP,E 4.7UF-50V
C19	87-010-401-089		CAP,E 1UF-50V
C20	87-010-401-089		CAP,E 1UF-50V
C21	87-010-405-089		CAP,E 10UF-50V
C22	87-010-405-089		CAP,E 10UF-50V
C23	87-010-406-089		CAP,E 22UF-50V
C24	87-010-405-089		CAP,E 10UF-50V
C25	87-010-405-089		CAP,E 10UF-50V
C26	87-010-405-089		CAP,E 10UF-50V
C27	87-010-405-089		CAP,E 10UF-50V
C28	87-010-406-089		CAP,E 22UF-50V
C29	87-010-260-089		CAP,E 47UF-25V
C30	87-010-260-089		CAP,E 47UF-25V
C32	87-010-401-089		CAP,E 1UF-50V
C41	87-016-520-099		CAP,E 3300UF-65V
C42	87-016-520-099		CAP,E 3300UF-65V
C43	87-016-520-099		CAP,E 3300UF-65V<EXCEPT U>
C43	87-010-582-019		CAP,E 4700UF-35V<U>
C44	87-016-520-099		CAP,E 3300UF-65V<EXCEPT U>
C44	87-010-582-019		CAP,E 4700UF-35V<U>
C71	87-010-384-089		CAP,E 100UF-25V
FC1	S1-84W-D56-8BB		F-CABL,560-GRY 7P
FC2	S1-84W-D18-8BB		F-CABL,180-GRY 5P
J1	S2-03H-T03-203		JACK,RCA 1P
J2	S2-03D-HJ4-200		JACK SPK ASSY 4P
J3	S2-03D-HJ4-200		JACK SPK ASSY 4P
R97	87-022-600-019		RES,M/F 0.1-2W
R100	87-022-600-019		RES,M/F 0.1-2W
S1	S2-02S-HSS-F11		SW,SLIDE
S2	S2-02S-HSS-F11		SW,SLIDE
S3	S2-02S-HSS-F11		SW,SLIDE

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
FRONT C.B			
C10	87-010-401-089		CAP,E 1UF-50V
C11	87-010-384-089		CAP,E 100UF-25V
C16	87-010-260-089		CAP,E 47UF-25V
C17	87-010-404-089		CAP,E 4.7UF-50V
D8	S1-53D-HB3-M14		LED,3M(RED)
D9	S1-53D-LTL-423		LED,LTL-4231-071A(GRN)
D10	S1-53D-LTL-423		LED,LTL-4231-071A(GRN)
D11	S1-53D-LTL-423		LED,LTL-4231-071A(GRN)
FC3	S1-84W-D10-8BB		F-CABL,100-GRY 7P
S4	87-036-170-089		SW,TACT
S5	87-036-170-089		SW,TACT
S6	87-036-170-089		SW,TACT
S7	87-036-170-089		SW,TACT
VR1	S1-021-032-120		VR,10KB
POWER C.B			
C51	87-010-396-019		CAP,E 470UF-35V
C52	87-010-384-089		CAP,E 100UF-25V
C53	87-010-393-089		CAP,E 100UF-35V
C54	87-010-260-089		CAP,E 47UF-25V
C55	87-010-404-089		CAP,E 4.7UF-50V
C56	87-010-384-089		CAP,E 100UF-25V
⚠F1	87-035-488-019		FUSE,3.15A/125V UL<U>
⚠F1	87-035-457-019		FUSE,T 3.5A/250V<EXCEPT U>
⚠F2	S1-47L-F25-150		FUSE,500MA/125V<U>
⚠F3	S1-47L-F25-150		FUSE,500MA/125V<U>
⚠F.C1	87-033-213-089		HOLDER FUSE
⚠F.C2	87-033-213-089		HOLDER FUSE
⚠PR2	S1-47L-F49-150		FUSE,500MA/60V<EXCEPT U>
⚠PR3	S1-47L-F49-150		FUSE,500MA/60V<EXCEPT U>
⚠PT1	S2-00P-T66-55U		PT,120V<U>
⚠PT1	S2-00P-T66-55H		PT,120V/240V<HEJ,HRJ,LH>
⚠PT1	S2-00P-T66-55E		PT,230V<EEZ,EZ,K>
RY1	87-045-361-019		RELAY,DH12D2-0S(M)-2
RY2	87-045-361-019		RELAY,DH12D2-0S(M)-2
CONNECTOR C.B			
SW C.B<HEJ,HRJ,LH>			
⚠S8	87-036-211-019		SW,SEL VOL<HEJ,HRJ,LH>

TRANSISTOR ILLUSTRATION

2SA1015
2SC1815
2SC2240
2SD655



2SD2061

■ACCESSORIES / PACKAGE LIST

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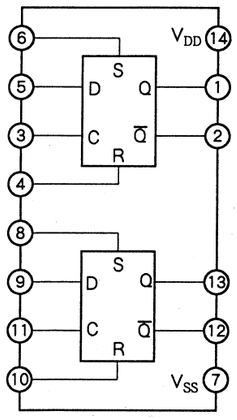
REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S2-04C-CT5-902		T PLUG CCT5902-0701M<HEJ,HRJ,LH>
2	S6-126-SPU-000		INSTRUCTION BOOK<U>
2	S6-126-SPL-H00		INSTRUCTION BOOK<LH>
2	S6-126-SPE-EZ0		INSTRUCTION BOOK<EZ,EEZ>
2	S6-126-SPH-E00		INSTRUCTION BOOK(HE)<HEJ,HRJ>

IC BLOCK DIAGRAM

IC, MC14013BCP

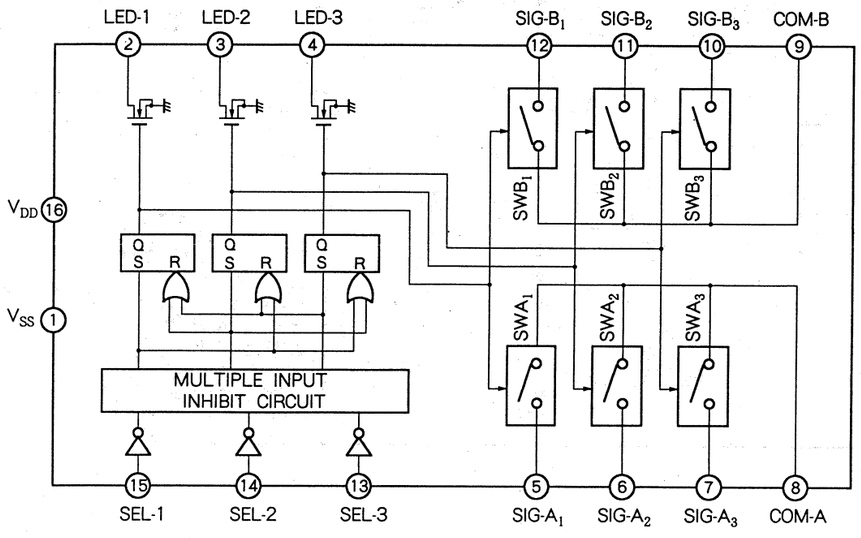


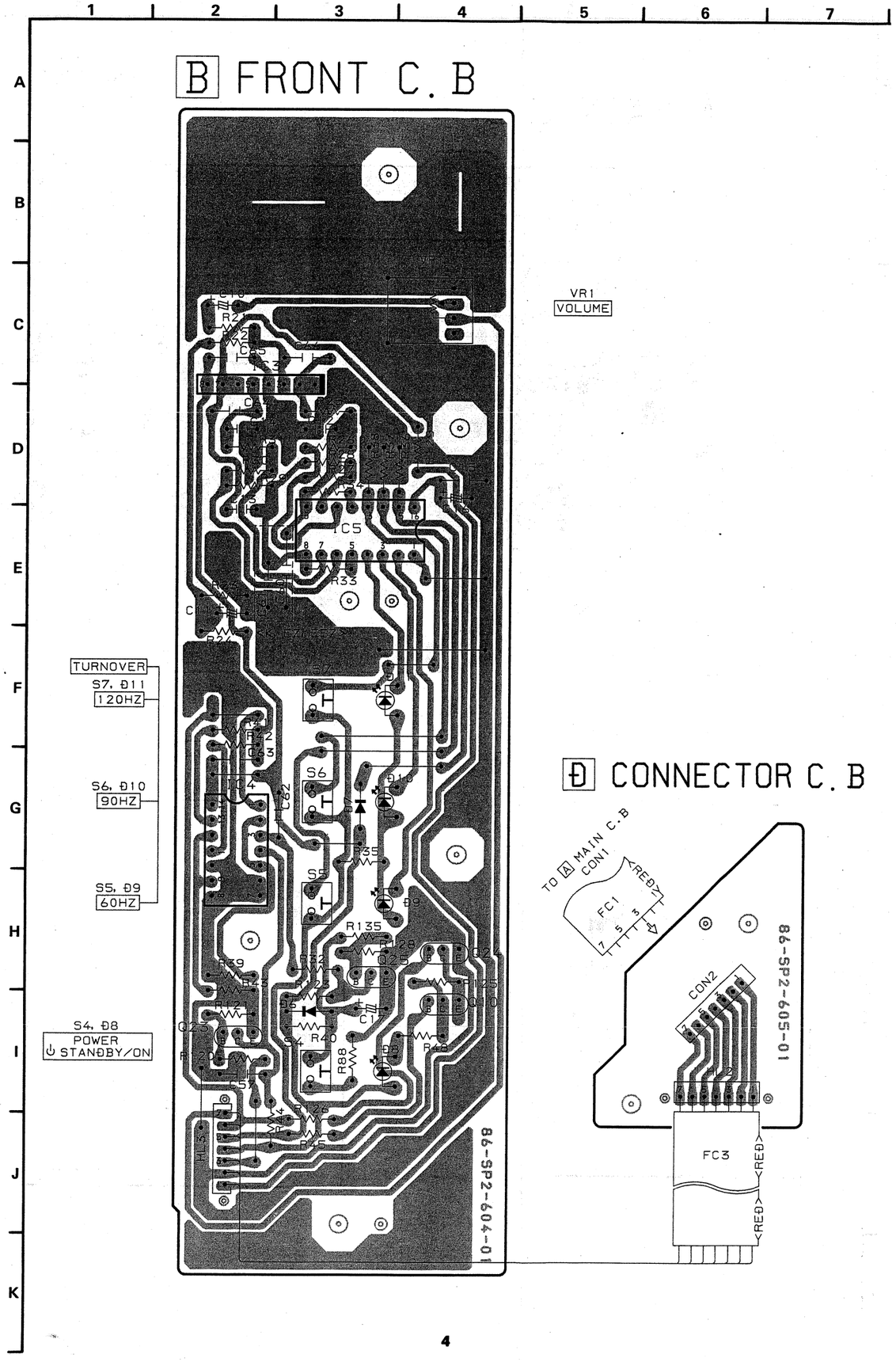
TRUTH TABLE

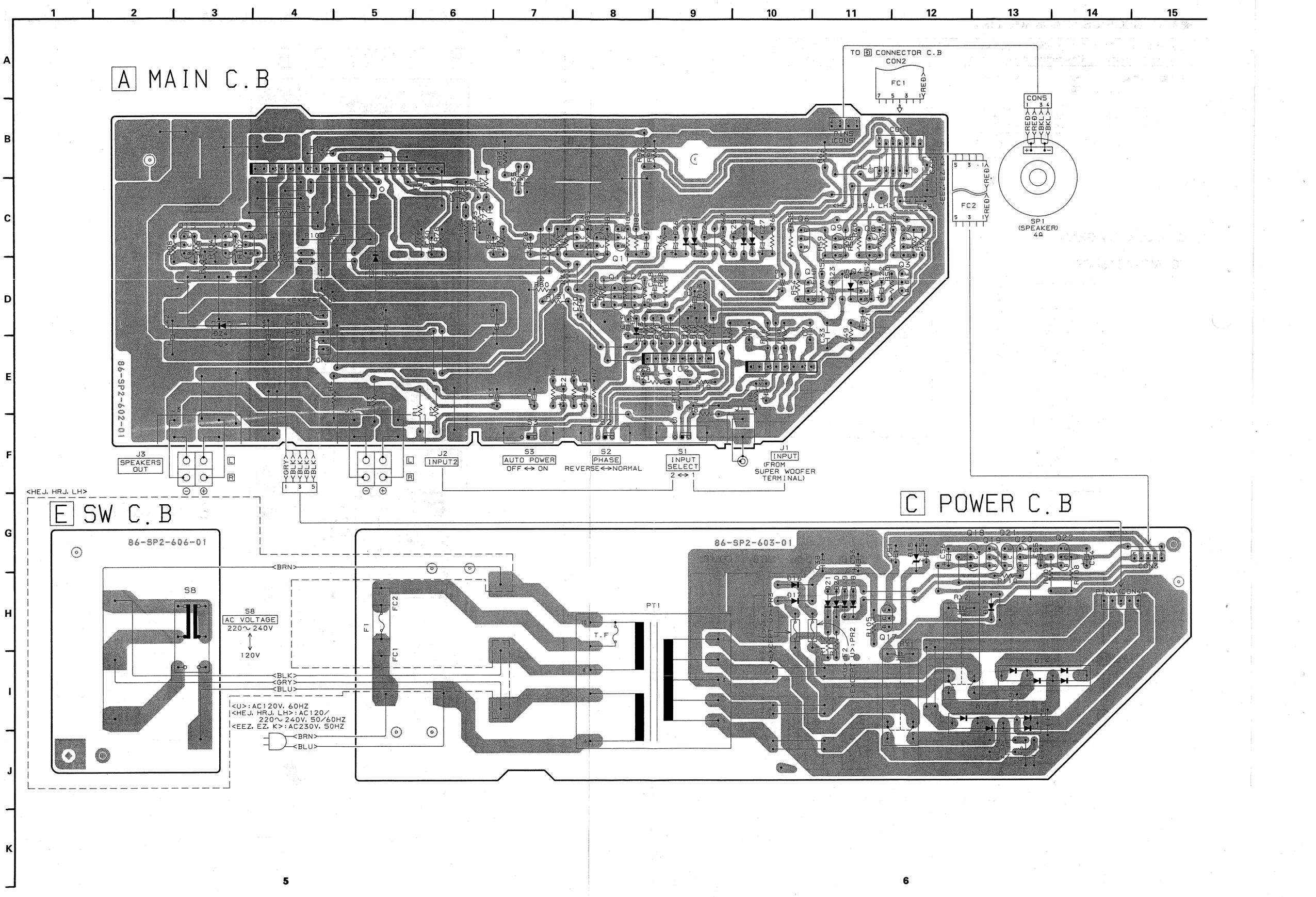
INPUT				OUTPUT	
CLOCK	DATA	RESET	SET	Q	$\overline{Q}$
⌐¬	0	0	0	0	1
⌐¬	1	0	0	1	0
¬⌐	X	0	0	Q	$\overline{Q}$
X	X	1	0	0	1
X	X	0	1	1	0
X	X	1	1	1	1

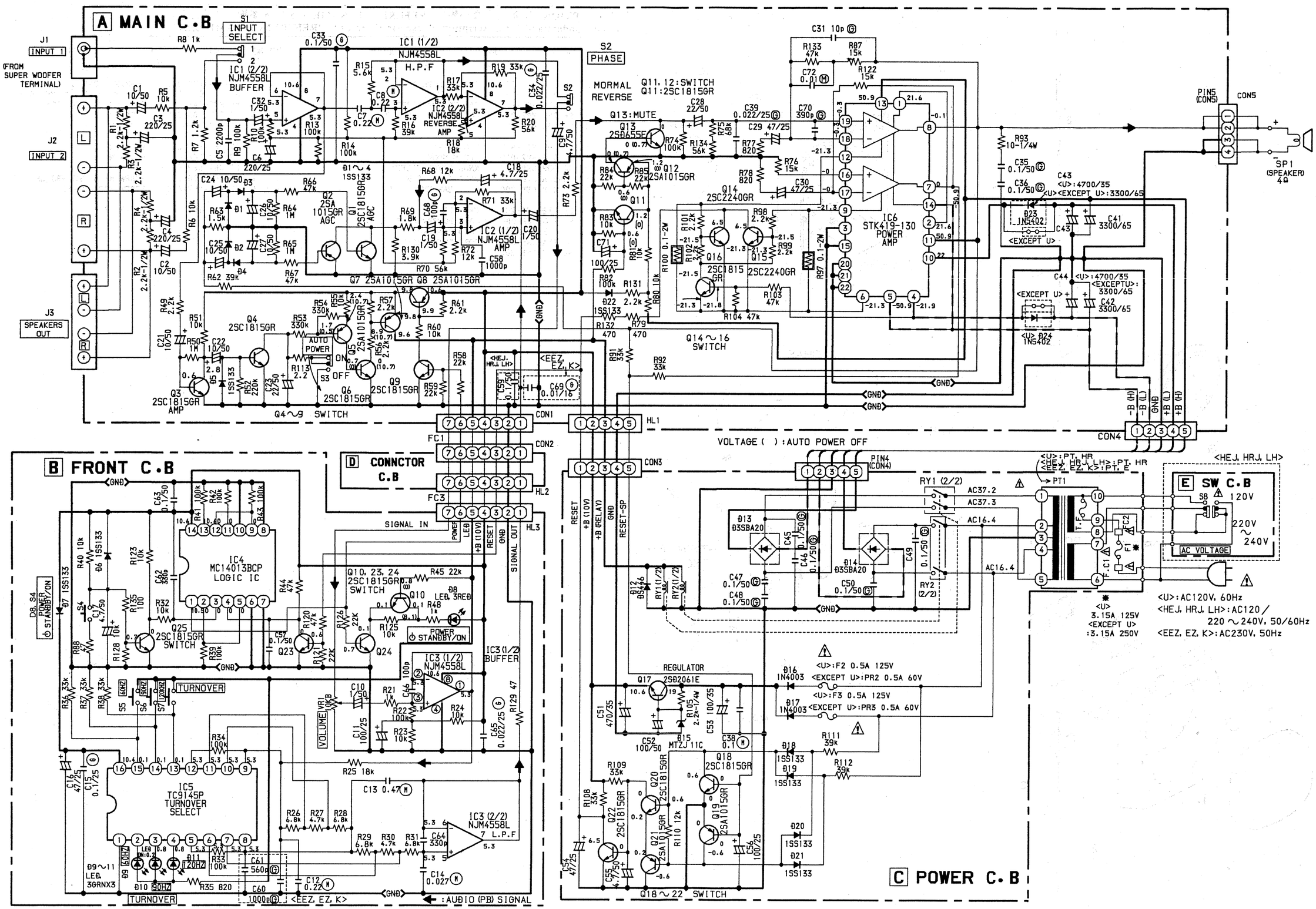
X = FREE

IC, TC9145P

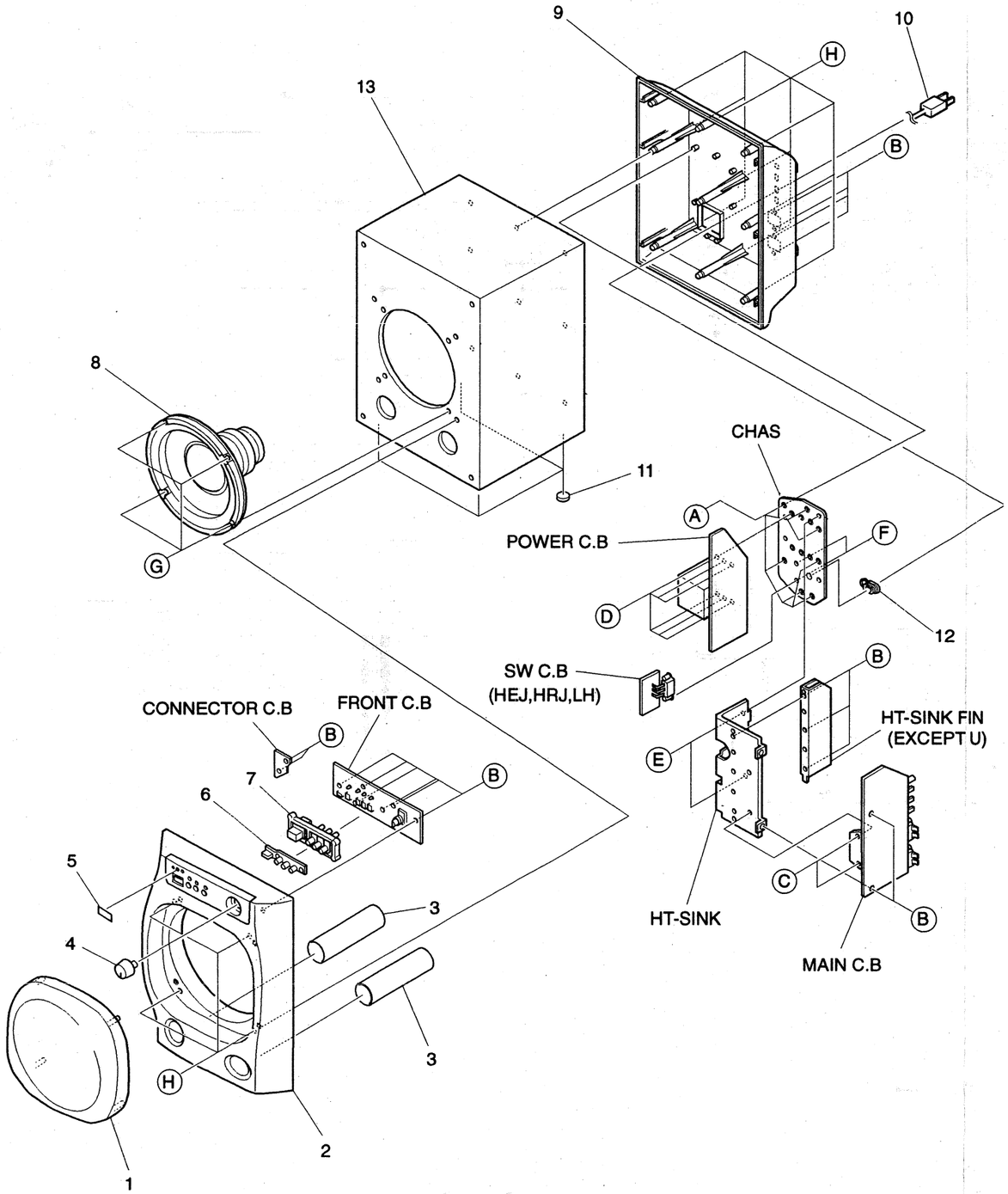





A MAIN C.B
86-SP2-602-01
TO ⊡ CONNECTOR C.B
CON2
FC1
CON5
CON1
PIN5 (CON5)
FC2
SP1
(SPEAKER)
4Ω
<HEJ, HRJ, LH>
<EXCEP U>
<U>
J3
SPEAKERS
OUT
J2
INPUT2
S3
AUTO POWER
OFF ↔ ON
S2
PHASE
REVERSE↔NORMAL
S1
INPUT
SELECT
2 ↔ 1
J1
INPUT
(FROM
SUPER WOOFER
TERMINAL)
E SW C.B
86-SP2-606-01
S8
AC VOLTAGE
220~ 240V
120V
<BRN>
<BLK>
<GRY>
<BLU>
<U>:AC120V, 60HZ
<HEJ, HRJ, LH>:AC120/
220~240V, 50/60HZ
<EEZ, EZ, K>:AC230V, 50HZ
F1
FC2
FC1
T.F
PT1
C POWER C.B
86-SP2-603-01
CON4
PIN4 (CON4)
<EXCEPT U>:PR3
<U>:PR2


A MAIN C.B
B FRONT C.B
C POWER C.B
D CONNCTOR C.B
E SW C.B
IC1 (1/2) NJM4558L H.P.F
IC1 (2/2) NJM4558L BUFFER
IC2 (2/2) NJM4558L REVERSE AMP
IC3 (1/2) NJM4558L BUFFER
IC3 (2/2) NJM4558L L.P.F
IC4 MC14013BCP LOGIC IC
IC5 TC9145P TURNOVER SELECT
IC6 STK419-130 POWER AMP
INPUT SELECT
PHASE
MORMAL REVERSE
Q11,12:SWITCH
Q11:2SC1815GR
Q13:MUTE
Q13 2SB655E
Q12 2SA1015GR
Q14 2SC2240GR
Q15 2SC2240GR
Q16 2SC1815 GR
Q14~16 SWITCH
Q1 2SC1815GR AGC
Q2 2SA1015GR AGC
Q3 2SC1815GR AMP
Q4 2SC1815GR
Q5 2SA1015GR
Q6 2SC1815GR
Q7 2SA1015GR Q8 2SA1015GR
Q9 2SC1815GR
Q4~9 SWITCH
Q10, 23, 24 2SC1815GR SWITCH
Q25 2SC1815GR SWITCH
Q17 2SB2061E REGULATOR
Q18 2SC1815GR
Q19 2SA1015GR
Q20 2SC1815GR
Q21 2SA1015GR
Q22 2SC1815GR
Q18~22 SWITCH
J1 INPUT 1
J2 INPUT 2
J3 SPEAKERS OUT
(FROM SUPER WOOFER TERMINAL)
SP1 (SPEAKER) 4Ω
POWER STANDBY/ON
TURNOVER
VOLUME
AUTO POWER ON OFF
SIGNAL IN
SIGNAL OUT
VOLTAGE ( ) :AUTO POWER OFF
<EEZ, EZ, K>
<HEJ, HRJ, LH>
<U>:PT, HR
<HEJ, HRJ, LH>:PT, HR
<EEZ, EZ, K>:PT, E
<U>:AC120V, 60Hz
<HEJ, HRJ, LH>:AC120/220~240V, 50/60Hz
<EEZ, EZ, K>:AC230V, 50Hz
<U>:F2 0.5A 125V
<EXCEPT U>:PR2 0.5A 60V
<U>:F3 0.5A 125V
<EXCEPT U>:PR3 0.5A 60V
<U>:3.15A 125V
<EXCEPT U>:3.15A 250V
:AUDIO (PB) SIGNAL
GND
RESET
+B (10V)
+B (RELAY)
RESET-SP
SIGNAL GND
-B (H)
-B (L)
+B (L)
+B (H)
AC37.2
AC37.3
AC16.4
AC VOLTAGE
120V
220V ~ 240V
REGULATOR
LED 3RED
LED GRN
POWER STANDBY/ON

MECHANICAL EXPLODED VIEW 1／1



MECHANICAL PARTS LIST 1／1

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If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S9-03A-6SP-200		FRAME CLOTH ASSY
2	S4-01A-6SP-2U0		CAB,FRONT<U>
2	S4-01A-6SP-200		CAB,FRONT<EXCEPT U>
3	S6-256-SP2-000		DUCT,50.5-46.5-130
4	S4-00A-6SP-200		KNOB,VOL
5	S4-00S-XSL-60Z		LOGO,AIWA
6	S4-056-SP2-000		LED,WINDOW
7	S4-00B-6SP-200		KNOB,POWER/SELECT
8	SW-80A-84H-FX4		SPKR,4OHM/100W
9	S4-01B-6SP-200		CAB,REAR<EXCEPT U>
9	S4-01B-6SP-2U0		CAB,REAR<U>
⚠ 10	S1-81G-206-0B0		CORD,POWER<EXCEPT K,U>
⚠ 10	S1-812-070-02B		CORD,POWER<U>
⚠ 10	S1-81A-CBS-040		CORD,POWER BS<K>
11	S4-30C-6SP-200		FOOT
12	S4-06A-420-000		BUSHING CORD AC
13	86-SP2-027-010		CABI WOOD<EXCEPT EEZ,EZ>
13	86-SP2-043-010		CABI WOOD,E<EEZ,EZ>
A	87-067-703-019		SCREW,M3-10
B	87-067-758-019		SCREW,M3-12
C	87-067-822-019		SCREW,M3-20
D	87-067-566-019		SCREW,M3-6
E	87-067-689-019		SCREW,M3-8
F	87-067-579-019		SCREW,M3-8<HEJ,HRJ,LH>
G	87-661-097-419		SCREW,WOOD M3-12
H	87-641-101-419		UT1+3-18

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART